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NEWS ISSUE — JUNE 17, 1948

Scaffolds with wide-angle railings protect workmen on Pennsylvania bridge job

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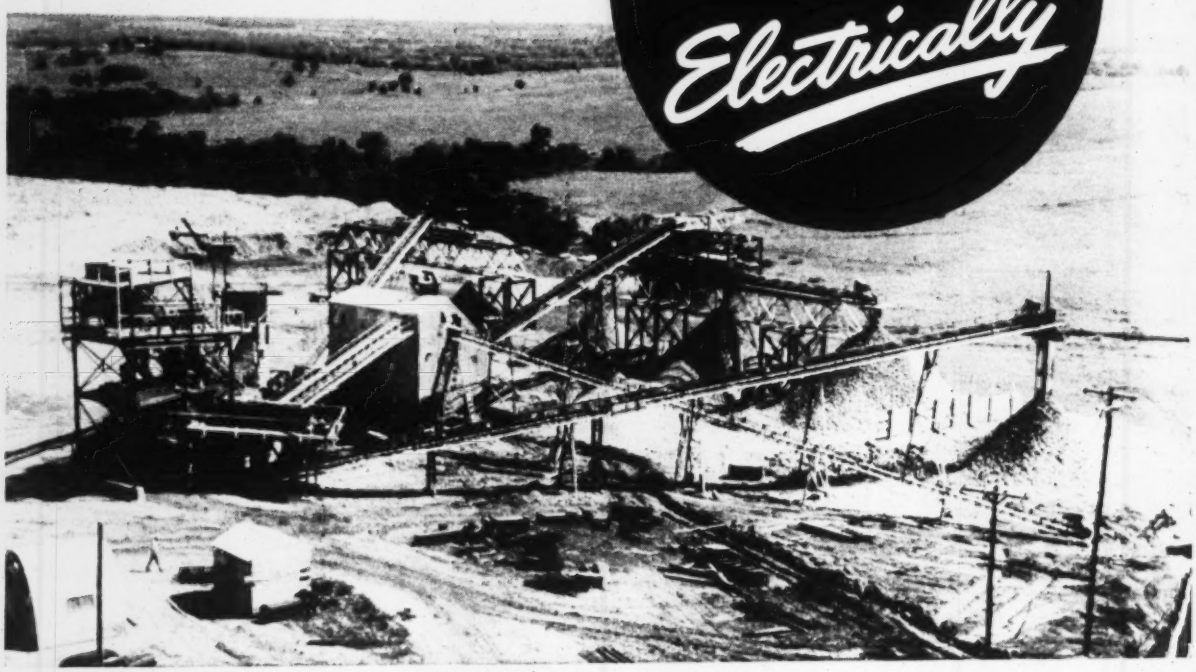

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GENERAL ELECTRIC

News of the Week

ENGINEERING NEWS-RECORD • JUNE 17, 1948 • VOLUME 140 • NUMBER 25

FTC orders brick makers to end monopoly practices

Trade commission ruling directed against tile brick groups—Ends common sales agencies, use of zoning methods for computing delivered-price quotations

Two Federal Trade Commission orders last week required five Ohio and Pennsylvania manufacturers of glazed facing tile, and nine New England brick producers to cease and desist from admitted combinations to fix prices and suppress competition.

The two orders named also the sales agencies for the respective groups and the industry trade association to which both groups belong.

Under terms of each order, the manufacturers and their sales agencies are forbidden to enter into, continue or carry out any planned common course of action, combination or conspiracy to:

1. Maintain any common sales agency by or through which prices, terms or conditions of sale are fixed; or otherwise to fix prices, terms or conditions of sale.

2. Maintain any agency, system or method for promoting adherence to prices, terms or conditions of sale, regardless of how they are established or announced.

3. Select outlets for substandard glazed facing tile (or brick), or limit the sale of such items to designated outlets.

4. Maintain any classification of types or sizes of glazed facing tile (or bricks), the purpose or effect of which is to restrain price competition.

5. Maintain policies or practices respecting the selection, designation or classification of dealers, the terms or conditions of sale to dealers, or the division of sales between dealers and the respondent manufacturers.

6. Use a zoning method of computing delivered-price quotations when other respondents simultaneously do likewise and by means of which any respondent is enabled to, and does, match its quotations on a delivered basis with those of other respondents.

7. Discriminate between and among purchasers by demanding or accepting for products of like grade, quality and quantity higher net prices from purchasers located near the producing plant of the seller than from purchasers more distantly located, and whereby any respondent is enabled to, and does, match its price quotations on a delivered basis with those of other respondents.

Affects trade organization

The FTC orders also direct the trade association—Structural Clay Products, Inc., Washington, D. C.—to refrain from instigating, aiding or cooperating in any of the prohibited activities. According to the commission's findings, the trade association devised and assisted in the formation of the sales agencies for the two groups.

Each of the cease-and-desist orders was issued after the respondents had filed answers to an FTC complaint. The answers, according to the FTC, admitted "all the material allegations of fact set forth in the complaint."

In the glazed facing tile order, the manufacturers named are the Continental Clay Products Co. and the Stark Brick Co., East Canton, Ohio; the Mapleton Clay Products Co., Mapleton, Ohio; the Metropolitan Paving Brick Co., Canton, Ohio; and the National Fire-proofing Corp., Pittsburgh, Pa.

Combined annual sales of these companies total more than 30,000,000 units of glazed facing tile, and their output in 1943 amounted to more than 60 percent of the total glazed facing tile shipped from the producing area of Pennsylvania and Ohio, the commission reported.

The regional sales agency and exclusive distributor for these five manufacturers is Brick and Tile Sales Corp., Canton.

Manufacturers named in the other order are: the Bridgewater Brick Co., New Haven, Conn.; the North Haven Brick Co., the Stiles and Hart Brick Co., the I. L. Stiles and Son Brick Co. and the Stiles and Reynolds Brick Co.,

(*Continued on page 6*)

Columbia River floods stay at peak

While engineers and relief agencies worked last week to strengthen still-threatened areas along the Columbia River and its tributaries, U. S. Weather Bureau officials predicted that the river level will remain above flood stage until at least July 1.

Since the first crest that destroyed the Portland, Ore., suburb of Vanport (*ENR* June 10, vol. p. 931), two other crests have passed down the river, each slightly lower than the one preceding it. Two more dikes along the lower Columbia have given way—one at Clatskanie, Ore., and one at Puget Island, and thousands of volunteer workers were kept employed to strengthen the sodden dikes all along the stream. The Lewis River, which broke through its dikes near Woodland, Wash., was cutting a new channel through some of the area's best farmlands.

Total damage in the Pacific Northwest area of the floods—including the valley of the Fraser River in Canada—was estimated by state and provincial officials at more than $150,000,000. Other damage—including loss of soil and of potential crops was beyond estimation, officials said.

High temperatures continued in the mountain areas of Washington, southern British Columbia, northern Idaho and western Montana, and the resultant heavy melting of snow continued to fill tributary streams to capacity.

Weathermen said that the accumulated snow cover is heavier this year than normal, and the melting is being accomplished during a shorter period.

One result is that the flow of the Columbia at Grand Coulee Dam has reached 548,150 cfs.—a new record.

NEWS IN BRIEF

In telegraphic form, here are latest news developments on the engineering and construction front during the week.

Housing—Marlo Construction, Inc., is building 78 houses in four additions at *Houston, Tex.*, and in the same city a $1,800,000 subdivision has been announced by the Bell-Tex. Corp. to be built on Port Oak Road . . . The Hyde Park, a 130-unit apartment building, is being built at Queens and Yellowstone blvds., *Forest Hills*, N. Y. City for Jewel Estates, Inc. of Brooklyn . . . Veterans Land Improvement Co. will build a $2,000,000 development at *Doylestown, Pa.* . . . Neal Wildman is to build a $4,000,000 apartment building at *Lansdowne, Pa.* . . . Arizona Manor, Inc., will build a 50-unit apartment and seven smaller apartments in *Phoenix, Ariz.* . . . Wm. Radkovich Co. of Los Angeles, Calif. has a contract to erect 100 double-unit dwellings at Muroc Air Force Base, *Lake Muroc, Calif.* They will be monolithically poured concrete houses built with the aid of Tournalayer machines made by R. G. LeTourneau, Inc.

Industrial Construction—A 14-story, $3,000,000 office building of reinforced concrete and structural steel will be built at *Dallas Tex.*, for the Employers Casualty Co. and the Texas Employers Insurance Assn. . . . Alabama Power Co. will build an addition to its *Gorgas, Ala.*, plant for 60,000 kw. . . . Work has started on a 19-story, $2,800,000 office building for the Rio Grande National Life Insurance Co. at *Dallas, Tex.* . . . Plans are filed for the 30-story $5,000,000 Hotel Darling at 13th and Market streets, *Wilmington, Del.* . . . Portland Cement Assn. has awarded a contract to Turner Const. Co. for building research and development laboratories at *Skokie, Ill.*, to cost about $2,000,000 . . . Site work and grading is going on for the $30,000,000 petroleum refinery plant of the Texas Co. at *Eagle Point, N. J.*

Highways—The first step toward actual construction of the Yorktown, Va., bridge will be taken this summer, when new borings and soundings are to be made in the York River bed.

EXPERIMENTAL TOWER—Microwave experiments conducted by technicians of the International Telephone and Telegraph Corp. will be carried on atop this 300-ft., aluminum sheathed tower at the Federal Telecommunication Laboratories at Nutley, N. J. Three large enclosed landings top the rigid-frame structure, and several interior platforms are also provided for installation of equipment. Main columns are anchored in a 10-ft. concrete mat, and the structure is designed for a maximum deflection at the top of only 10 inches under load from a wind of 80 mph. maximum from any direction. Giffels and Vallet, Inc., Detroit, were engineers and architects; Edwards and Horth of New York were consultants, and Fuller Construction Co., New York, was contractor.

Parsons, Brinckerhoff, Hogan and MacDonald, New York consulting engineers are preparing specifications for construction of the low-level, double-swing span bridge between *Yorktown* and *Gloucester Point*.

Water and Sanitation—Dredging operations in the Schuylkill River cleanup are to begin July 20 Milo F. Draemel, secretary of Forest and Waters, *Pennsylvania*, has announced, as contracts of nearly $5,000,000 have been awarded . . . Chairman M. L. Bong, of the *Erie County, N. Y.*, planning board, favors the proposed plan of augmenting water service in western New York at a cost of $15,000,000—immediate projects to cost $6,500,000.

Labor—Painters in *Buffalo, N. Y.*, have won a 25-cents-an-hour boost to $2.12½ an hour and work is resumed . . . Plumbers in *Lincoln, Neb.*, are asking $2.25 an hour . . . In *Cincinnati, Ohio*, 2,100 union hod carriers and construction laborers struck for a 22½-cent-an-hour raise . . . Unions of the *Baton Rouge, La.*, Trades Council (AFL) and the Associated General Contractors have failed to reach agreement on wage demands.

Correction—The caption of the picture of the L. A. Dreyfus Co's plant published on vol. p. 691 of the May 13th issue should have stated that Alexander D. Crosett was the engineer.

THE COVER PICTURE

Scaffolds with wide-angle railings, and well-built wooden stair towers are used by the contracting division of the Dravo Corporation, Pittsburgh, Pa., to provide protection for workmen during the construction of twelve 90-ft. substructure piers for a 1,931-ft. bridge across the Monongahela River near Pittsburgh. Stair towers provide safe access to the platforms.

The scaffolding is built integrally with the wooden forms used for pouring concrete. Handrail posts are installed at a 135-deg. angle so that the top rail is 2 ft. further out than the scaffold planking, the space between being covered by 1-in. wire mesh.

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Canadian engineering body discusses western power, irrigation problems

Engineering Institute of Canada hears plans for harnessing waters of western rivers—Dean J. N. Finlayson new president

With the floods along the Fraser River and in the northwestern United States highlighting the discussions, members of the Engineering Institute of Canada devoted a large part of their recent annual meeting to discussions of water supply and control problems of Canada's western provinces.

At Banff, Alta., more than 600 delegates approved formation of a special committee to draw up recommendations to provincial and federal authorities as to ways and means of harnessing rivers which have devastated large areas of British Columbia this year.

The group elected J. N. Finlayson, dean of the faculty of applied science of the University of British Columbia, as president. Dean Finlayson succeeds L. F. Grant, of Queen's University.

Papers on western water problems centered around the use of waters of the Saskatchewan River by the three prairie provinces.

D. M. Stephens, Deputy Minister of Mines and Resources for Manitoba, estimated that about 3.5 million hp. ultimately will be available, two million of it to be generated on the Nelson and Saskatchewan rivers. However, he cautioned that if current proposals for the diversion of about four million acre-feet of water from the South Saskatchewan before it reaches the Manitoba border were carried out, it would mean reduction of almost 40 percent in water power available to Manitoba in low water years.

Another viewpoint on the use of Saskatchewan River waters was discussed by Ben Russell, director of water resources for Alberta. He said that the South Saskatchewan drains 49,800 sq. miles of land in Alberta and that fifteen large irrigation projects have been carried out in the province at a cost of about $36,000,000. In addition, there are about 650 small privately owned systems.

Mr. Russell suggested that by overall planning involving pumping with excess power in periods of low demand, some of the conflicting interests in the water can be resolved.

A. E. Palmer, superintendent of the Agricultural Experiment Station at Lethbridge, Alta. told engineers that with no more intensive development than now practiced it is possible to irrigate another million acres of land.

The St. Mary-Milk River project in southern Alberta is expected to permit Canada to use her fair share of the waters of the two rivers, said G. L. MacKenzie, chief engineer of the Prairie Farm Rehabilitation Branch of the federal Department of Agriculture.

Waters of the two rivers were allocated by the international joint commission in 1921, and since that time the United States has constructed works

J. N. FINLAYSON

capable of using all of its share of the flow. Canada, however, has not utilized more than half of its portion.

The project now under construction will cost a total of about $15,000,000 and will increase the irrigated land in Alberta by almost 400,000 acres.

Two large reservoirs are now being created by the construction of the Pothole and St. Mary dams. The first will be a rolled fill earth dam with a crest length of 850 ft. and a maximum height of 130 ft., it will require more than 400,000 cu.yd. of fill. St. Mary Dam will be 186 ft. high and 2,600 ft. long at the crest, and its construction will include two large tunnels—one a diversion tunnel 20 ft. in diameter and 2,115 ft. long and the other an irrigation tunnel about 17 ft. diameter and 2,500 ft. long.

Conservation matters

A first progress report from the institute's Committee on Conservation was made by Alan E. Cameron, chairman, who is president of Nova Scotia Technical College.

Maj. Gen. Howard Kennedy described the work of the newly-formed Eastern Rockies Forest Conservation Board, of which he is chairman. This board has been set up jointly by the dominion government and the Alberta provincial government. Its functions are to take all necessary measures for conservation of about 9,000 sq. miles of forest area, just to the east of Jasper and Banff National Parks. Consisting of the chairman and one member, each appointed by official government agencies, it has an annual budget of $300,000 for 25 years. Surveys are under way for a road system to give access to all parts of the forest area.

Officers and resolutions

During the five-day meeting, delegates reaffirmed their stand in favor of excluding engineers from collective bargaining legislation. The institute supports the new federal Industrial Relations Act, which specifically excludes engineers from collective bargaining agreements.

Other officers installed, in addition to Dean Finlayson, are: council members, S. H. Frame, Victoria; R. S. Lawrence, Lethbridge; and K. W. Mitchell, Calgary.

Award contract on Delaware bridge

In a sudden reversal of a previous adverse decision, the Delaware State Highway Department last week awarded an $11,401,000 contract to Merritt-Chapman & Scott Corp., New York, for piers and anchorage foundations for the $40,000,000 Delaware River Memorial Bridge near Wilmington. Howard, Needles, Tammen and Bergendoff are consulting engineers.

The commission had announced two months ago (*ENR* April 22, vol. p. 599) that it was indefinitely postponing its plans for construction of the bridge, because of shortages of materials and high costs. Thereafter, the department's special division handling engineering details was disbanded, and Lt. Gen. Eugene Reybold (USA ret.) who was head of the division, recently announced he had joined the Lustron Corp. as vice-president in charge of operations (*ENR* June 10 p. 138).

Although no official explanation was offered for the reversal, it was noted that the original low bid received last January was $12,896,300, and the Dravo Corp., Pittsburgh, Pa., which offered this bid, later revised it downward to $12,184,000. However, the Dravo organization early in April cancelled its bid on the ground that it was unable to obtain needed steel.

At the same time the commission announced that it had accepted an offer to dispose of $40,000,000 bridge bonds.

DEVELOPMENTS BEYOND U. S. BORDERS

Digested from reports by Engineering News-Record correspondents and the McGraw-Hill World News Bureau

U. S. Engineers recommend 17-point program for Italy—South Africa road work held up by lack of trained personnel—Puerto Rico grants tax holiday to hotel builders—Huge public works programs reported in Russia, Argentina, other countries—Other foreign news

Washington, D. C.—The two U. S. members of a joint investigating committee that recently completed a survey of development possibilities in southern Italy, have submitted their report to the Italian Government.

In brief, the 17-point report told President Luigi Einaudi that southern Italy offers great opportunities for development of power, irrigation and agricultural resources that can be aided by adoption of certain practices that have proved useful in the United States.

The two-man U. S. mission, which made the survey at the invitation of the Italian Foreign Office, consisted of George E. Tomlinson, assistant director of the Branch of Project Planning, Bureau of Reclamation, and M. A. McCall, assistant director of the Bureau of Plant Industry, Department of Agriculture. In twenty days of travel through southern and insular Italy, the two men covered some 7,500 miles—about 3,000 by air and the rest by automobile, train or afoot. They inspected almost every square mile of the 47,000 sq. miles in Italy's southern regions, accompanied by officials of the appropriate district governments. Their report suggested a number of possibilities to assist development.

Fundamental to effective use of power and irrigation resources, it was urged that responsibility for all planning of these developments be centered in a compact, full-time Italian commission to include representation from the ministries or governmental agencies that carry out various phases of the overall program.

Noting that southern Italy and the islands of Sicily and Sardinia are largely hilly or mountainous, the report says that good farmland is concentrated mainly in the valleys and along the coast. Pressure of 17,000,000 people in the area has forced farming of lands that should be cultivated only by the most careful methods to prevent erosion—if they are farmed at all.

Since there is a wide variation in annual rainfall over the area, the report recommends water storage projects, and, where feasible, the spreading of winter water over lands to increase the underground supply.

At only one place, on the island of Sardinia, is there coal for power generation. Required expansion of power supply for farm, industrial and municipal use calls for development of every available hydroelectric resource.

The mission said that a large increase in hydro power is possible. Present capacity for the region surveyed is 536,210 hp. and present annual production is 1,176,000,000 kwh. Under construction is 45,175 hp. that will produce 213,600,000 kwh. annually, and projected plants will increase annual production by 1,678,000,000 kwh.

Among other recommendations was interconnection of power systems. Research work has been handicapped in the past by wide variance in frequencies, the variation ranging roughly from 25 to 60 cycles. Present law requires standardization of all new electric power installations at 50 cycles—the common European frequency. Equipment now on order or being installed in Italy is designed for two frequencies, wherever necessary, one to serve the present operation and the other to permit switching over to the 50-cycle standard in the future.

Noting that agriculture must continue to be the primary support for all the areas studied, the report recommended careful methods of farming and a vigorous program of reforestation and maintenance of effected grass cover to prevent erosion. To squeeze the last drop of benefit out of the slender water resources, the report recommended multiple use of all water for irrigation, power, domestic and industrial supply, and other purposes.

As an aid to the central government commission already mentioned, the report suggested creation of a continuing Italian-American committee to utilize U. S. experience in making a comprehensive study and developing an overall program.

ELECTED—First president of the Inter-American Association of Sanitary Engineering is Clarence I. Sterling, Jr. who took office at a meeting in Santiago, Chile last month (*ENR* April 22, vol. p. 596). Mr. Sterling, presently director of the health and sanitation division of the Institute of Inter-American Affairs, has been associated with the construction of sanitary facilities in most of the South and Central American countries. Chosen as vice-president was Alberto Ortiz Irigoyen, chief of construction of the Mexican national water-resources board. Donald L. Snow, sanitary engineer of the U. S. Public Health Service was elected general secretary.

Transport

South Africa — Lack of enough trained engineers and other staff members may seriously retard the plans being prepared to build, improve and maintain roads in the four provinces of South Africa (Transvaal, Cape, Natal and Orange Free State).

The Union of South Africa expects to spend about $200,000,000 over the next ten years for construction and for purchase of machinery. However, there are few local contractors equipped to handle major contracts and because of a shortage of government staff, road authorities are awarding medium-sized contracts of about $1,000,000, to encourage local concerns to expand and take on larger contracts.

Venezuela—An unusual development is the announcement of a project for construction of a toll road through the Avila range of mountains which separates Caracas from La Guaira.

To be built by private investment, the project will involve tunneling through the mountain range and cost about $12,000,000. The road would cut

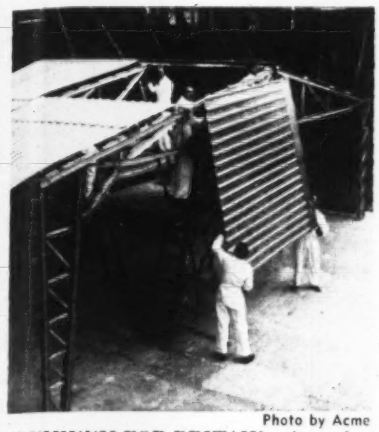


Photo by Acme

ALUMINUM FOR BRITAIN—A newly-designed "Allframe" building that requires no internal pillars is built up from standard bays comprising wall stanchions and roof trusses was demonstrated in London recently by Allmin, Ltd., Farnham Royal, Buckinghamshire.

the present one hour drive through the mountains to 15-minutes, backers say. The toll charge would be $1.

Mexico—The Mexican Government will spend $6,175,000 this year to advance construction of the southeastern railroad to link Mexico City and the rich states of Tabasco, Campeche and Yucatan. Several sections of the line are now in service and the entire approach is expected to be completed by May, 1949.

Brazil—The government of the state of Parma is seeking bids for construction of a railway, estimated to cost about $26,000,000.

India—A "back door" highway to connect India and Kashmir is slated for completion by the end of this month at a cost of about $9,000,000, to give India a substitute for the previous main road which now terminates in Pakistan territory. The road runs 65 miles from Pathankot in India's East Punjab province to Jammu in Kashmir.

Public Works

Despite the continually rising costs and shortages of both materials and U. S. dollars, Argentina's industrial organizations and the government itself have succeeded in getting a considerable construction program under way.

According to reports to the McGraw-Hill World News Bureau at Buenos Aires, public works projects amounting to about $55,000,000 in U. S. currency had been placed under contract during the first half of 1947. In addition, in the Buenos Aires zone alone private capital had started projects totalling more than $25,000,000 in value.

The public works program consists of 368 projects, including 81 school buildings, 104 highway jobs, 43 hospitals, one airdrome and 11 housing projects. According to available figures, construction in 1947 was running about 25 percent by volume ahead of 1946.

However, costs were going up—for materials and labor they increased by about 100 percent between 1945 and 1948. Ordinary labor is now receiving 16 pesos per day (about $4 in U. S. currency); labor is very short; Argentina is short of cement and has had to resort to a rationing system with delivery costing about $1.90 per bag weighing 110 lb.

Italy—In order to provide labor for the 1,500,000 unemployed in Italy, the Italian Ministry for Public Works has prepared a program of public works involving the expenditure of about two billion lira. It will include housing, construction and repair of office buildings and highways and other work.

Power

Argentina—The Argentine Department of Trade and Commerce has stepped up by more than two years all hydraulic and electrical works included in the five-year plan. Among these are the dams and central electrical plants at Punta Negra and Rio Jackal in the province of San Juan; and the Rio de Cos Molinas dam in Cordoba.

Belgian Congo—A new hydro-electric plant of 2,000 hp. is under construction on the Kasad River, and another to produce up to 10,000 hp. will be built soon on the Lubilash River.

Miscellany

Puerto Rico—A "tax free" holiday designed to stimulate investments for the construction of new hotel properties in Puerto Rico is provided in legislation signed recently by Governor J. T. Pinero.

Special consideration was given to the hotel industry in view of the admitted need for both tourist and commercial hotels in the principal cities of San Juan, Ponce, Mayaguez and elsewhere on the island.

Complete exemption from income, property and municipal taxes for a period of twelve years is granted to eligible tourist hotels under the new legislation, with graduated exemptions for three additional years on the basis of reduction at the rate of 25 percent less each year.

Mexico—The Federal District has budgeted $22,250,000 to build six public markets and to recondition six present markets. The Navy Department has budgeted $49,500,000 for a 2-year program of port improvements at Frontera, key harbor of Tabasco State on the southern Gulf of Mexico.

Russia—For the first time in the USSR, construction workers engaged in rehabilitating the "Zaporozhyestal" steel works near the Dnieper power plant are using electric welding instead of riveting in erecting blast furnaces.

India—"Bamcrete" may become a new term in the construction industry if experiments under way in India bear out early results. The name would apply to the use of native bamboo in reinforcing concrete as a replacement for the customary steel rods and nettings. The Indian Forest Research Institute has been assigned to make intensive tests of the idea following trials that indicate "Bamcrete" may have a life expectancy of 30 years.

Brazil—One of the largest housing projects in South America is now under construction in Buenos Aires. Known as the "Los Perales" collective housing project, 39 blocks of two-story apartments to house 5,088 persons are being erected in the factory and stockyard section south of the city proper. Work was started last September and the new buildings will be ready for occupancy later this year.

British Combine photo

PREFABS FOR HOLLAND—In the village of Wagenigen, near Arnhem, Holland, workmen erect the first of some 500 wooden prefabs purchased from Austria to help relieve the acute housing shortage. Built to conform with older structures of the Dutch countryside, the houses offer virtually waste-less construction — an item of great importance to a country that must import most of its lumber.

FTC orders end of brick monopoly acts

(Continued from page one)

all of North Haven, Conn.; the Donnelly Brick Co., New Britain, Conn.; the Michael Kane Brick Co., Hartford, Conn.; the Eastern Brick Co., East Berlin, Conn.; and the New England Brick Co., Boston.

These companies make and sell sand struck brick. Their combined sales average 75,000,000 bricks annually, and their production in 1944 amounted to approximately 74 percent of the total of all bricks shipped by New England brick manufacturers, according to the FTC findings.

The order is also directed against Colonial Clays, Inc., Worcester, Mass., as the manufacturers' selling agent for the nine brick companies named.

Charge price discrimination

Both of the FTC complaints charged price discrimination on the basis of zone systems. Use of a zone system results in the quoting and charging of identical delivered prices, just as does the basing point arrangement recently condemned and ordered stopped by the Supreme Court in the Cement Institute case (*ENR* May 6, vol. p. 671). The only difference is in the method of computing the uniform delivered prices.

By the zone system, the FTC said in the New England Brick complaint, price quotations are "arbitrarily made the same for all points of delivery within a zone or geographical area, irrespective of the fact that some of the delivery points are nearer than others to points of production." The manufacturers "form a united front in presenting what is in effect a single quotation to any prospective purchaser," and the purchaser thus is denied the benefits of price competition.

In the complaint against the five producers of glazed facing tile, the FTC stated that the trade area for the manufacturers—most of the United States east of the Rocky Mountains—was divided into some 40 zones. For each of these zones, pricing schedules were established and published, setting forth the delivered price for each zone and the terms and conditions of sale.

Under this system of selling glazed facing tile, the purchaser was quoted a delivered price made up of "a mill net price, plus an arbitrary charge in lieu of the actual freight rate from the nearest plant". Upon delivery of his order, the purchaser paid the actual freight to the carrier and deducted this charge from the quoted price, remitting the balance to the manufacturer with whom he was dealing.

In both the brick and glazed facing tile combinations, the FTC charged, the manufacturers enforced their price agreements by filing with the common sales agency a copy of each invoice, showing the price at which each sale was made. If an invoice disclosed a departure from agreed-upon prices or conditions of sale, the seller was liable for damages or a penalty.

Vigorous action of the FTC in proceeding against manufacturers of bulk commodities who operate in concert to maintain delivered-price systems (whether basing-point, multiple basing-point or zone types) has aroused concern in Congress, particularly since the Supreme Court upheld the commission's order against the Cement Institute and a group of portland cement companies. Three separate resolutions have been introduced to investigate the implications of Supreme Court decisions (in the cement case and other cases) and to study their effect on business.

Washington observers expect Congress to enact some kind of resolution for an investigation.

H. W. Streeter retires; headed sanitary research

Harold W. Streeter, Officer in Charge of the Federal Security Agency's Water and Sanitation Investigations Station at Cincinnati, Ohio, will retire July 1, after 34 years with the Public Health Service.

Mr. Streeter will be succeeded by Vernon G. MacKenzie, who recently returned from a 9-month assignment with the Public Health Section of the American Mission for Assistance to Greece. The Cincinnati Station is now engaged in studies to improve methods of water purification and sewage treatment, and in studies to determine effects of industrial pollution and methods of alleviation of domestic and industrial sewage pollution.

Mr. Streeter is a graduate of the Massachusetts Institute of Technology, 1907, and he was engaged in design, construction and operation of water and sewage plants in the eastern part of the United States before joining the Public Health Service in 1914. He organized the Joliet Laboratory on the Illinois River in 1921 and since 1923 has been connected with the Cincinnati station.

Mr. MacKenzie, also a Massachusetts Institute of Technology graduate (1927) was with the Chicago Sanitary District and the Detroit Department of Public Works until he joined the Public Health Service in 1939.

Arbitration fails in bridge dispute

Construction firm to go to courts over damages for alleged error in location of bridge over Kansas River

Efforts to arbitrate a contractor's claim for damages of more than $100,000 caused by an alleged error on the part of consulting engineers failed at Kansas City, Kan., last week.

The damage claim was brought by William J. Howard, Inc., construction company of Chicago, Ill., against Wyandotte County, Kansas. The company, which was contractor on the reconstruction of the 12th St. bridge over the Kansas River for the county, contended that engineers for the county were in error by 28 ft. on the location of construction cofferdams for a new pier. Subsequent necessity to make new excavations and provide new cofferdams when the error was discovered is the basis for the claim which is made by the contractor.

No basis of agreement

Representatives of the construction concern and of the county board of commissioners appointed a three-man arbitration board, representing the county, the firm, and a third party, met in Kansas City to arbitrate the claim. The negotiations were broken off, however, when Eugene P. Kealy, of Chicago, attorney for the construction concern, and J. E. Schroeder, county counselor, said they found no common ground in the discussion of the situation. Company attorneys indicated that the case will be taken to the district courts for settlement.

The construction firm contends that the county's consulting engineers—Sverdrup & Parcel, of St. Louis—specified the points at which digging on the old pier was to be accomplished. The contractor proceeded with excavation for a cofferdam at that location preparatory to removing an old pier within or partly within the limits of the cofferdam. On completion of the excavation some eleven months later, final points for construction of the cofferdam were requested. In setting these points, the engineers discovered that the original location was in error about 28 ft., both parties said.

The consultants recommended that the county reject the contractor's claim for additional compensation on the ground that it was the responsibility of the contractor to have determined the points at which excavation should have been made, according to the contract signed.

New York anti-pollution law studied

An act creating a water-pollution control board and providing for the coordination of abatement activities of the New York state health and conservation departments has been prepared for submission to the 1949 legislature.

The proposed bill was analyzed for the New York State Sewage Works Association, meeting at Niagara Falls on June 4, by Earl Devendorf, assistant director of the state bureau of environmental sanitation.

Mr. Devendorf, reported that the new board is specifically directed under the act to formulate and adopt standards of purity and classifications of waters within the state in accordance with best usage in the public interest. Forming a part of the health department, the control board will consist of the commissioners of health, conservation, agriculture and markets, and the attorney-general.

Other sections of the bill provide that existing personnel in the health and conservation departments will be utilized to administer the program and enforce the law. Public hearings will be held on all actions that result in a deprivation or limitation of rights or property.

Mr. Devendorf listed four prohibitions included in the proposed law: (1) Discharges of polluting substances into the waters of the state or into sewers which ultimately empty into such waters; (2) new outlets for the discharge of sewage, industrial wastes and other wastes into the waters of the state without a permit from the board; (3) discharges into the marine district of substances harmful to or the sale of shellfish; (4) construction of new or extensions of sewers or treatment works without prior approval of the board.

To prevent undue hardship in enforcement of prohibitions, the act delimits the powers of the board. Most existing discharges cannot be discontinued except on one-year notice directing the alleged offender to abate the polluting content of the discharge. The only exceptions are cases of existing discharges that cause an actual or potential hazard to public health, Mr. Devendorf reported.

Time extension is permitted

If compliance with the regulations and standards of the board is impossible or impractical because no adequate method of treatment is known, or if financial difficulties preclude construction of sewers or treatment works, the board is permitted to extend the time within which pollution must be abated for a period extending over five years or more.

Under the proposed act, criminal and civil penalties for violations of pollution rules and regulations in respect to protection of either health or conservation are made uniform. Criminal liability is imposed only for a wilful violation of a final determination of the board.

Sewer authority recommended

In a discussion of financial and organization problems, Earl F. O'Brien, consulting engineer, Syracuse, N. Y., declared that a joint effort by two or more adjacent communities will usually provide better sewage-treatment facilities for less money than separate projects.

Mr. O'Brien favors the use of sanitary districts or sewer authorities when debt limitations prevent construction of treatment works or when a small community cannot finance construction and operation of its own facilities. In support of this contention, he pointed to the successful records of the Buffalo Sewer Authority and the Ley Creek Sanitary District.

For the best report on sewage-plant operation the association presented, a cup to L. A. Sammis, operator of the West Brentwood state hospital disposal facilities. A certificate of excellence was awarded to Uhl T. Mann, superintendent of the Ley Creek plant, Syracuse, N. Y., for another operating report.

S.F. Bay crossing studies started

With the organization of the Division of San Francisco Bay Toll Crossings of the California State Department of Public Works (*ENR* Jan. 8, 1948, vol. p. 29), actual work has started on investigations leading to the construction of a second bay crossing between San Francisco and Oakland.

The division is making studies for the California Toll Bridge Authority of two locations, one a southern crossing from the vicinity of Army St. in San Francisco to Alameda of the type recommended by a joint Army-Navy Board. This consists of a combination of an over-water trestle and an under-water tube. The other crossing being considered is a structure paralleling and located some 300 ft. north of the existing bay bridge.

In a recent report, Ralph A. Tudor, chief engineer of the newly created division, listed the problems to be studied in connection with each crossing. These include:

Possible restriction of tidal flow by construction of proposed artificial islands; availability of dredging equipment that will reach depths of 120 ft.; and questions of lighting and ventilating.

Financial data

Even though two crossings are being given detailed study, indications are that only one can be built in the immediate future. This was pointed out in a paper on the financing of a new crossing recently presented before the Commonwealth Club of San Francisco by C. H. Oglesby, assistant professor, Stanford University. Revenues at the present time from tolls amount to $8.3 million a year. Assuming that two crossings would net $10 million a year and assuming that for each $6 of annual revenue $100 of revenue bonds can be sold, the debt the two crossings can stand is $170 million, Oglesby said. With $30 million yet outstanding on the existing crossing, this leaves $140 million that can be raised by revenue bonds for financing a new structure. This, he concluded, is not enough financial support for construction of two structures.

Aluminum Co. of Canada plans large plant in B.C.

Aluminum Co. of Canada will make a $100,000 preliminary engineering survey of the Bute Inlet area on the British Columbia coast some 180 miles north of Vancouver to determine power resources and site possibilities for establishment of a plant comparable to that now operated by the company at Arvida, Que.

The Bute Inlet area, involving the undeveloped Chilko-Taseko lakes power system 40 miles back in the mountains at the head of the inlet, is one of three being considered by the company, and according to a survey by government water engineers could produce about 1,083,000 hp.

Inspection of the area was made at the end of May by R. E. Powell, president, in company with Lands and Forests Minister E. T. Kenney of British Columbia. Powell said the company would undertake the preliminary survey before going ahead with a full engineering survey which would cost about $1,000,000.

Inspections will also be made of the two other potential sites, at Dean Channel, 350 miles north of Vancouver, and Gardner Channel near Prince Rupert.

HIGHLIGHTS OF MUNICIPAL DEVELOPMENTS

Summarizing current activities in city engineering and construction throughout the country.

San Francisco approves $15,000,000 bond issue for sewage disposal, rejects $87,000,000 proposal for school construction—Plan complete reconstruction of Indiana town—New smoke drives—Other municipal affairs

Although they approved bond issues of $15,000,000 for sewage disposal and $2,750,000 for a new juvenile detention home, voters of San Francisco, Calif., last week rejected an $87,000,000 bond proposal for school construction, that issue missing the necessary two-thirds majority by fewer than 15,000 votes.

The sewage treatment funds, along with an $8,000,000 state grant and $3,000,000 on hand, will be used to build two sewage treatment plants—the North Point plant near Bay and Kearny Sts., and an Islais Creek plant near Quint and Jerrold Sts. The new plants will be connected by a 6-mi. pipeline.

Additionally, in the southeastern section of the city to be served by the Islais Creek plant, a number of new intercepting sewers and several pumping plants will be built to collect and convey raw sewage to the treatment plant. Sludge will be converted into gas and fertilizer.

Construction of the plants will end the city's discharge of raw sewage into San Francisco Bay, to comply with a 1946 State Department of Public Health resolution that revoked all permits for discharge of raw sewage into state waters. The bond issue for a juvenile home will go toward construction of a $4,351,000 institution on the western slopes of the city's Twin Peaks.

Other cities also pushed ahead with major sewage disposal programs.

In Houston, Tex., the city council approved plans for $2,831,000 worth of municipal storm sewers; the Indianapolis, Ind., board of public works approved a $3,785,000 sewer relief construction program; and Vanvouver, B. C., announced it would spend $1,000,000 on storm and sanitary sewers during the next year.

City Planning

A novel experiment in community planning—the complete reconstruction of a town—led off news of community planning.

The experiment will be conducted at the town of Coatsville, Ind., which was almost totally destroyed by a freak storm on March 19. With the aid of the Indiana Economic Council and the Indianapolis committee of the Indiana Society of Architects, the town residents recently organized the Coatesville Town Plan Commission to rebuild the 500-population community.

Under the plan, the hodgepodge of irregular lots and tracts will be reassembled into a more convenient and orderly arrangement of lots and building sites, each of which would front on a well-located street of adequate width, instead of on an alley or a street too narrow for present conditions. Provision is planned for better traffic flow, off-street parking, a large public park, a new public library, town hall, fire station and auditorium.

Officials of St. Louis, Mo., began study of a sweeping guide plan released by the Metropolitan Plan Association for the integrated development of the five-county area comprising Greater St. Louis.

A 50-page book, which envisages a population in St. Louis of 1,820,000 or more by 1980, describes the comprehensive development of transportation, housing, park and other facilities. The plan shows the need for coordinated development of the Greater St. Louis area, which includes the city and St. Louis and St. Charles counties on the Missouri side of the Mississippi River, and St. Clair and Monroe counties in Illinois—a total of 2,901 square miles. Among the suggestions are designation of truck routes through congested areas, an area-wide housing program, moderization of building codes, and others.

Wide World photo

AIR CARGO STORAGE—Quonset-type structures will provide cargo storage at New York City's huge Idlewild airport, opened for limited service two weeks ago. Foreign-flag airlines will use the partially-completed airfield starting July 1.

Other city planning matters included a proposal at Omaha, Neb., for the development of the Carter Lake area into a "miniature World's Fair" to include swimming pools, a bathhouse, boat houses, dance pavilion, bowling alleys and other amusement devices.

And in Boston, Mass., the Washington Street elevated structure—long regarded as a blight—appeared on its way out, when the legislative Ways and Means Committee recommended to the legislature that it approve a $30,000,000 expenditure by the Metropolitan Transit Authority that will include construction of a tunnel to replace the elevated structure.

Smoke Control

Spurred by public clamor for smoke-free air within municipal limits, more and more U. S. cities are beginning campaigns against smoke nuisances, the American Municipal Association said last week.

A survey by the group indicated that more than 25 cities have started smoke prevention programs since the end of the war.

Among developments reported during the week by *Engineering News-Record* were:

The appointment of Herbert H. Ulrich, of Omaha, as chief smoke regulation engineer for the Nebraska city to direct enforcement of the smoke control ordinance passed by the city council last September; appointment of Louis M. Rosnick, Chicago air pollution expert, as chief engineer of the Los Angeles County Air Pollution Control District, to take charge of the district's research program, mechanical engineering department and licensing activities.

In Milwaukee, Wis., where a smoke control ordinance will go into effect Oct. 1, city officials began to consider the cost of enforcement. The city itself will spend more than $200,000 a year to buy higher grade coal than it now uses and will eventually spend about $1,200,000 to install stokers for more efficient operation.

Traffic Problems

The rejection of a tax levy that would have been used to finance construction of a freeway in Portland, Ore., and a battle over off-street parking measures at Minneapolis, Minn., were among the features of traffic handling news during the week.

Portland voters defeated a proposal for a tax levy which would have assessed two mills for three years to pay 60 percent of the right-of-way cost of the proposed Sullivan's Gulch Freeway. The project, designed by the state highway department, would make use of a natural ravine to bring a limited access freeway through the eastern portion of the city at a grade below normal street level. Some 27 overpass structures would be involved.

At Minneapolis, Minn., the city council began discussion of the proposed off-street parking program that would call for the construction of a municipal garage.

Other moves toward solution of parking problems included:

The township of Union, N. J., scheduled hearings on an ordinance that would require builders of new homes and business structures to provide off-street parking facilities. Covering every type of building from private homes to factories, the measure would require adequate off-street parking space for the accommodation of extra motor vehicles attracted to the township by the new projects. The measure fixes a single parking space as a unit of 160 sq. ft., and requirements for providing space include: multiple dwellings, not over two stories, must provide three parking spaces for each four dwelling units; apartment houses, parking space for every two families; rooming and lodging houses with more than three guest rooms or six guest beds must provide two parking spaces; and a hotel would need space for each six guest rooms. Theatres, retail stores and factory buildings are also covered in the proposed parking ordinance.

At Newark, Ohio, the city awarded a contract for the purchase and installation of 370 parking meters to bring the total to 805; and Boston, Mass., placed its large-scale plan for free parking lots at the Metropolitan Transit terminals in the hands of a 16-man committee instructed to crystallize the program.

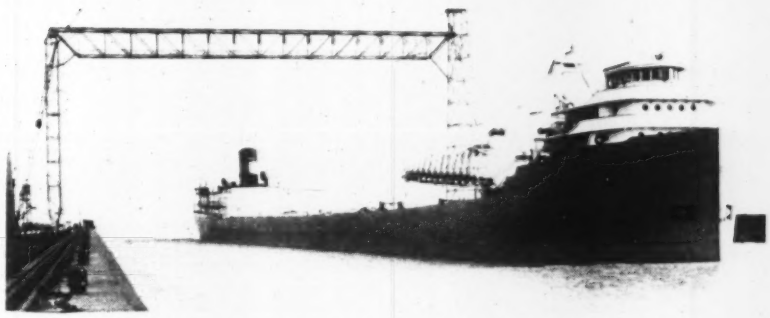
Airports

The New York International Airport at Idlewild, in the Borough of Queens, is now open for limited service.

The huge airfield, said to be the largest in the world, was opened with the commissioning of a temporary control tower to operate 12 hours daily while airline pilots familiarize themselves with the new base. Under the management of the Port of New York Authority, the field will be used immediately by international airlines operators to relieve the pressure of flights now concentrated at La Guardia Field —some 20 miles to the north.

Two runways, one 6,000 ft. and one 8,000 ft. long, are ready for use. A third, 8,200 ft. long, will be ready soon. Temporary hangers and other structures are being pushed to completion for immediate use.

Meanwhile, first runway construction in the $5,000,000 expansion program for the Atlanta, Ga., municipal airport will begin this summer with the letting of contracts for new runways and taxiways. The project will include construction of a new east-west runway 500 ft. wide and 5,200 ft. long, and a new northwest-southeast runway, 500 ft. wide and 4,500 ft. long.



GAS LINE BRIDGE—Spanning 280 ft. across the Gary Steel Works harbor of the Carnegie-Illinois Steel Corp. at Gary, Ind., this 101-ton truss bridge was completed recently to carry a 36-in. gas main from a nearby coke and by-products plant to the Gary Sheet and Tin Mill. Erected by the American Bridge Co., the truss is anchored to a fixed tower at the right, and to a rocker tower—hinged top and bottom—at left. Truss was assembled complete on pontoons, and raised to final position 125 ft. above lake level by cable rigging to the previously-erected towers.

Water Supply

Alternative proposals for expanding the capacity of the Niagara Falls, N. Y., water supply system are contained in a special report submitted by Greeley and Hansen, Chicago engineers. Either alternative would cost in the neighborhood of $5,000,000. Additionally, the report strongly recommends extension of the present water intake tunnel into Emerald Channel, between Grand and Navy islands, at a cost of about $770,000.

Tulsa, Okla., prepared to open bids on $5,000,000 in water and sewage improvement bonds approved by city residents in January to pay for the new Spavinaw reservoir and flow line, new sanitary and storm sewers and other improvements.

Experiment

If a project now under consideration in Canton, Ohio, becames a reality, the city will have instituted something new in apprentice training and will also have acquired a sample of bizarre architecture, according to the Bureau of Apprenticeship of the U. S. Department of Labor.

The proposal is the construction by apprentices, under supervision of journeymen, of a new building trades school at which apprentices in those crafts would receive the related classroom instruction they must have. The proposal was made by a member of the Canton Board of Education and has been indorsed by the Stark Tri-County Construction Council, Inc., representing Canton contractors, and the Stark Tri-County Building Trades Council, representing the unions.

Committees of the contractors and the unions are working out plans for construction with the Canton Board of Education, which will furnish the site and materials, while the apprentices are to furnish the labor.

Under the plan, one unit is to be built each year, with no provision for uniformity in design or materials, to give apprentices experience in various types of construction and in the use of different materials. It is expected that the structure will eventually be completed as a demonstration of many types of building—including mistakes that future apprentices should make every effort to avoid.

Random Lines *from an editor's notebook . . .*

. . . In which new vistas for accurate topographic mapping of municipalities by photogrammetric surveying are envisaged in the Cleveland, Ohio, Regional Goedetic Survey.

With increasing emphasis being placed on speed and economy of surveys needed for municipal development of freeways, water and sewerage extensions, and other civic improvements, the century-old plane table method of mapping thickly populated or highly industrialized metropolitan areas is on its way out. In its stead, photogrammetric surveying, or aerial photography, shows great promise providing costs can be kept low and the degree of accuracy high.

Such a survey now under contract for the Cleveland, Ohio, Regional Geodetic Survey, an initial flight having been made on April 2 of this year, is noteworthy on three counts—low cost, specified accuracy of completed maps, and joint sponsorship by political subdivisions deriving the greatest benefit.

As a measure of the economy of the program, a $41,000 contract calls for (1) furnishing over 5,000 aerial negatives covering the entire 450 sq. mi. of Cuyahoga County about one-third of which is within the boundaries of Greater Cleveland, and (2) 1,000 copies of topographic maps covering 6 sq. mi. of area in the heart of Cleveland, to be produced from the aerial survey.

As to accuracy, specifications call for the maps, to be made by the Brock-Weymouth photogrammetric method, to be furnished on a scale of 1 in. equals 200 ft., with a 2-ft. contour interval. Of particular significance is the fact that the completed maps of the 6-sq. mi. area in question are not the usual mosaics, with 5-ft. contours, ordinarily used in highway location or slum clearance development. Instead, specification requirements are sufficiently exacting to insure a degree of accuracy equal to plane table surveys.

The third unique feature of the survey is its cooperative sponsorship. Principal sponsors are the State of Ohio, Cuyahoga County, and Cleveland. Others include Case Institute of Technology, certain municipalities in Greater Cleveland, the U. S. Coast and Geodetic Survey, and private industries. Sponsorship is not manifested by direct monetary contributions, but in the form of personnel, equipment, materials and office space.

Decision to make the aerial survey was based on a desire to step up the tempo of securing a unified survey of Cuyahoga County containing accurate horizontal and vertical controls. Also, as an experiment in accurate topographic map-making by the photogrammetic method.

In reality, the Cleveland Regional Geodetic Survey had its inception on July 12, 1937. Since then, the principal accomplishments have been in the establishment of precise, horizontal and vertical control systems. About 16 sq.mi. of topographic mapping by plane table methods were executed during a 6-year period at a cost of $6,000 per sq.mi. This mapping was in strips for the immediate purpose of location and design of Cleveland's projected freeway and interchange system. A total of $1,148,000 has been expended on the over-all survey as of Jan. 1, 1948, of which $353,000 was sponsored by the Works Progress Administration.

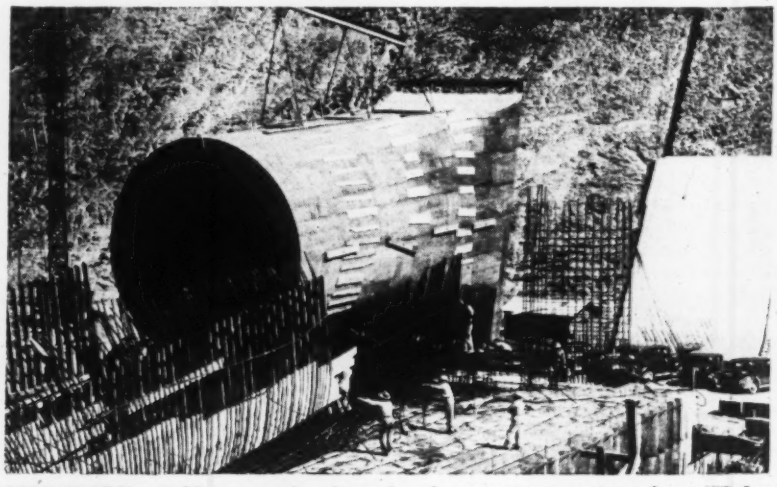
Little ground control needed

One factor contributing to the relatively low contract price for the current aerial survey is that few base, or check, lines will need to be run by the photographers, since over 1,500 monuments already have been established throughout the county by ground crews. For convenience in checking these control points, they have been marked with a 3-ft. square target containing a 30-in. white circle with black border. Three-foot circular targets are painted where monuments have been placed on sidewalks or street pavements.

Specifications call for the completed topographic maps of the 6 sq.mi. in question to be printed in four colors. All planimetry (man-made culture) will be shown in black, with appropriate identifying symbols. Contours, contour numbers and spot elevations will be in brown, woodlands will be green, and drainage will be in blue. Maps will be 31x24-in. over-all, containing a mapped area 5,000 ft. east and west by 4,000 ft. north and south.

In general, requirements of this experimental topographic mapping project, by photogrammetric surveying, are based on specifications recommended in the ASCE Manual No. 10, *Technical Procedure for City Surveys*, adopted in 1934. Rigid control over the end product is shown by certain specification requirements. For instance, 90 percent of all contours must be plotted within a one-half contour interval (1 ft.), and none may be shown more than one contour interval from correct position. Moreover, 90 percent of all well-defined planimetric features (streets, highways, railroads, buildings, industrial sites, etc.) must be plotted within 1/50-in. (4 ft.) of their true positions. All drainage and woodlines are required to be plotted within 1/25-in. (8 ft.) of their true positions.

G. Brooks Earnest, associate professor of engineering surveying, Case Institute of Technology, is in direct charge of the program as consulting director of the Cleveland Regional Geodetic Survey. Over-all supervisory authority is vested in a 40-man committee under the auspices of the Regional Association of Cleveland. E. J. Bohn is director of the association and Samuel F. David is committee chairman.



PIPE WORK—A 23-ton wooden form for the transition section of one of five 22-ft. dia. pipes leading to the power plant is set in place at Davis Dam. The dam, a U. S. Bureau of Reclamation project, is located 67 mi. below Hoover Dam. Primary contractor is the Utah Construction Co.

C. Frank Allen dies: teacher and author

C. Frank Allen, 96, who was most widely known as the author of "Railroad Curves and Earthworks", died at Boston, Mass., June 7.

A graduate of Massachusetts Institute of Technology in 1872, Mr. Allen began teaching railway engineering there in 1887 following six years of sanitary engineering work in New England and nine years in the West as an engineer for the Santa Fe Ry. Two years later the first edition of his widely used railroad handbook appeared. His "Tables for Earthwork Compilation" appeared in 1893, and "Field and Office Tables" in 1903.

In 1896, Mr. Allen was advanced to professor of railroad engineering, which position he held until his retirement in 1916.

While in the West, Mr. Allen became interested in law, especially as it applied to railroad work, and was admitted to the bar in New Mexico in 1885. Some years later he wrote "Business Law for Engineers".

Following retirement, Professor Allen continued active in the affairs of the many engineering organizations of which he was a member. Honorary membership in the Boston Society of Civil Engineers was conferred on him in 1932, and by the American Society of Civil Engineers in 1938.

Large mental hospitals planned by states

Construction of the $14,000,000 northern hospital for mental patients at Westville, Ind., has started, with a $2,000,000 preliminary program of construction of power and water plants and an administration building, it was recently announced by Dr. Norman M. Beatty of the Indiana Council for Mental Health. The sections for housing 2,500 patients and inmates will come later.

New hospital at Michigan City

Probably $7,000,000 will be spent on the section planned to house 500 criminally insane persons now incarcerated at the Michigan City state prison. Estimates place the cost at about $14,000 for each inmate, because of the need for extra security.

The erection of a $5,000,000 psychiatric institute on the University of Minnesota campus to train personnel has been proposed to the Minnesota legislative research council by Alexander G. Dumas, head of Gov Luther W. Youngdahl's advisory committee on mental health.

Dumas recommended construction of a 250-bed hospital on the campus at which all types of training necessary in the treatment of mental disorders would be given.

The state division of public institutions would be financially responsible for the construction and operation of the institute. University regents would be responsible for the professional staff, including salary funds.

More water available at Elephant Butte dam

Elephant Butte reservoir, N. M., will give water users a near-normal supply of irrigation water this year, because of an above-normal runoff of the Rio Grande.

L. R. Fiock, project superintendent, has announced the allotment is being increased from 2 acre-ft. of water per acre, set last January at the worst of the water shortage, to 3 acre-ft. No water is being allocated, however, for "suspended land"—property inside the project area without first-class water rights but whose owners in past years have been allowed to purchase some water.

Storage in Elephant Butte and Caballo reservoirs, however, is still below the corresponding date of 1947, having been 602,000 acre-ft. on May 26, compared with 656,000 a year ago. Last year, however, the spring runoff had ended by that date, while it is still in progress this year. The runoff reached a peak of about 15,000 sec. ft. past Albuquerque on May 28, three times the theoretical "flood stage," and is threatening levees in the Middle Rio Grande Conservancy District, in central New Mexico above Elephant Butte.

To recommend high dam on Columbia River

As a result of a hearing conducted by the Corps of Engineers at Arlington, Ore., to determine public sentiment on plans for proposed damming of the Columbia River at that point, engineers will recommend a single high dam. Two low dams 26 miles apart constituted the alternate.

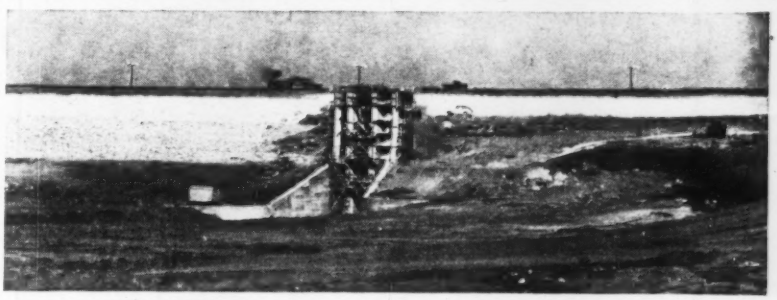
The high dam proposal has been favored by the engineers, but the alternate plans were prepared at the request of local interests that would be affected by flooding if the high dam were built. Cost of the high dam is estimated at $295,000,000, which is $190,000,000 less than the estimated cost of two low dams.

Site of the high dam would be just below Arlington about 90 air miles up the Columbia from Bonneville. One of the proposed low dams would be at the same site, the other downstream at the mouth of the John Day River.

Col. O. E. Walsh, Portland district Army engineer, reported that both proposals are economically sound, but the single dam would have a benefit ratio almost double that of the two low dams, primarily because of the difference in cost.

Under either proposal installed power capacity would be 1,100,000 kw, and both would provide irrigation and navigation benefits.

This dam is one of six in the Army's plans for the Columbia. Others in the chain are Grand Coulee and Bonneville, already completed; McNary, now under construction; Foster Creek, located between Grand Coulee and McNary, and The Dalles located between Arlington and Bonneville. This list does not include two dams on the Snake River, main tributary to the Columbia and an integral part of the engineers' Columbia basin development program.



AHEAD OF SCHEDULE—Ready for use a month ahead of schedule, the Hords Creek Dam and reservoir flood control project of the Corps of Engineers will relieve the shortage in the public water supply of Coleman, Tex. Shown above are the outlet works while under construction. Coleman contributed $100,000 to the total cost of $2,400,000. List and Clark Const. Co., Kansas City, Mo., built the embankment, emergency spillway and outlet works.

MEN AND JOBS

F. Clark Green, Milford, Conn., has been named acting superintendent of the public works department to succeed **Earl A. Merwin,** who has resigned. Mr. Green served with the Seabees 30 months and has been with the Milford highway department since 1936.

Col. W. W. Wilson, 1939 West Point graduate, is the new executive officer of the Army Engineers at Louisville, Ky. He was assigned there from Yokohama, Japan, where he was with the engineer section of Headquarters 8th Army.

William D. Shannon, consulting engineer, has been temporarily appointed King County engineer at Seattle, Wash. He will take charge of the office for two or three months until the commissioners can select a permanent county engineer. The last person to hold the position was C. G. Smith, who resigned in protest against political control of the office.

August G. Hanson, Klickitat County engineer at Goldendale, Wash., has resigned after holding the position for many years.

Supervising construction on Mississippi's new $1,500,000 highway bridge over the Yazoo River near Vicksburg, are (left to right): Joe Schick and Wilbert Halford, inspectors; C. S. Hill, bridge engineer; G. L. Lemon, resident engineer; and R. E. Gaines, construction superintendent, Foster & Creighton, Nashville, Tenn., contractors on the 1,560-ft. steel stringer and concrete deck approach spans.

Spark-plugging construction on a $680,000, 4-mile, 3-lane highway grading project near Monteagle, Tenn., on U. S. Highway 41, are: E. L. Sandy (center) resident engineer; Homer Chasteen (left) assistant construction superintendent and L. V. Wesley, construction superintendent for the contractor, H. E. Wolf Construction Co., St. Augustine, Fla.

Robert H. Lochow, civil engineer, and **R. Ruskin Fisher,** professional land surveyor, have opened offices in Seattle, Wash., at 604 University St. Mr. Lochow formerly was with the Corps of Engineers, The Austin Co. and other firms while Mr. Fisher has been with the state highway department for the last five years.

E. B. Gibbs, senior resident engineer of the North Carolina State Highway Department, at Oxford, N. C., has resigned to join William F. Bowe and Co., Augusta, Ga., construction firm, and now is supervising the construction of a highway by-pass at Roxboro, N. C. With the exception of four years during World War II when he served with the Army Engineers in the China-Burma-India Theatre, he had been connected with the N. C. Highway Department continuously since 1921.

F. A. Jacocks, director of sanitation for Charlotte, N. C., has been elected city manager of Rock Hill, S. C. He will relieve acting City Manager W. M. Kennedy, who has held the position since the resignation of J. J. Rauch last May. Mr. Kennedy announced he will resign to enter private business.

C. Stott Noble, civil engineering graduate of Alabama Polytechnic Institute, has been named assistant state director of the Federal Housing Administration at Greensboro, N. C. He served as regional housing expediter at Cleveland, Ohio, during 1946-47 and recently has been in business at Cincinnati.

The Kentucky Highway Department has announced that **John C. Moore,** former assistant district engineer at Covington, has become district engineer at Ashland. An alumnus of Georgetown College, and a professional engineer, Mr. Moore first joined the department in 1926.

Francis E. Twiss has joined the staff of the Chamber of Commerce of the United States at Washington, D. C., as highway transportation specialist in the transportation and communication department. He is a civil engineer graduate of Rensselaer Polytechnic Institute, 1934. He was in the engineering department of Hartford, Conn., until he joined the Navy's Civil Engineering Corps in 1942. In 1947 he became assistant professor in Yale University's bureau of highway traffic.

V. G. Younghusband, vice-president of The Foundation Co. of Canada, has been elected a director of the company with which he has been connected since 1920.

Robert B. Richardson, a veteran of more than 25 years in the highway department, has been appointed director of highways and chairman of the Louisiana State Highway Commission.

C. E. Perkins, of Kansas City, Mo., has been retained as city manager for Winston-Salem, N. C. The new manager form of government goes into effect July 1, when Mr. Perkins takes office.

Harry A. Lynch of Ottawa, Ont., has been named chief engineer of the Canadian Department of Fisheries, succeeding **Charles Bruce,** retired.

J. E. Hanlon of Vancouver has been appointed city engineer at Port Alberni, B. C. He succeeds **J. R. King** who is leaving for England.

Donald R. Mayo, a civil engineering graduate of the University of Wisconsin, has been appointed city engineer of Kaukauna, Wis. During the war, he was chief surveyor of the Fourth Marine Division mapping section.

Claire G. Walker, city engineer of Berlin, Wis. since 1917, has resigned.

Jeff J. McNamee Engineering Co., engineers and surveyors, have a new office in the Aytes Bldg., Athens, Tenn.

Appointment of **James E. P. Darrell,** assistant traffic engineer of the Minnesota State Highway Department since 1941, as head of the department's Traffic and Safety division, succeeding the late W. F. Rosenwald, has been announced.

Henry T. Gurley has opened an office at Burlington, N. C., as a designing engineer in the structural, architectural and industrial fields. He started as a civil engineer with the Southern Railway in 1928 and has operated engineering designing offices in Nashville and Columbia, Tenn., and Louisville, Ky.

R. A. House, district engineer for the Nebraska highway department at North Platte, has resigned to go with the Winter-Ray Engineering Co. of Grand Island. His place will be taken by **Harold H. Easom.**

Wilmer O. Held, city engineer of South Milwaukee, Wis., has resigned to take another position at Whitefish Bay.

Earl G. Forbes has resigned as city engineer of Auburn, Wash.

While discussing ASCE matters at Pittsburgh recently G. G. Greulich, consulting engineer for the Carnegie-Illinois Steel Corp. (left) and Richard E. Dougherty, ASCE president (right) meet Mayor Lawrence of Pittsburgh (center)

H. D. Hinman (left) president of the Virginia Engineering Co., Inc., and Co. F. F. Frech, Philadelphia district engineer, participated in the recent ground-breaking ceremonies for the 320-bed Wilmington, Del., VA hospital, designed and to be constructed under Colonel Frech's supervision. Virginia Engineering Co., Inc., Newport News, has the chief contract of $6,911,000.

Ed Courtney (left) resident engineer, and J. U. Benziger, plant superintendent, Georgia Power Co., check blueprints of the new 45,000-kw. steam-electric generation station on the Flint River near Albany, Ga.

Paul B. McKee, president of Pacific Power & Light Co. (left), congratulates L. T. Merwin at ceremonies marking the change of name of the utility's Ariel Dam in Clark County, Washington, to Merwin Dam to honor the power man's work in hydroelectric development in the Northwest. Merwin was president of the Northwestern Electric Co. when it merged with PP&L last year. The lake behind the dam was named Lake Merwin and the river leading into it bears the same name.

Carl Appleford (left) and J. B. Cooke, civil engineers on the Pacific Gas and Electric Co.'s hydroelectric development in California, discuss the layout during a field trip. The hard hats are for protection while inspecting the tunnels.

ENGINEERING SCHOOLS

New engineering curricula at Iowa State—Graduate school of nuclear engineering at Richland, Wash. — Surveying teachers' conference—Freeman Fund Scholarship offered

Details of new undergraduate engineering curricula at the State University of Iowa, Iowa City, have been announced by F. M. Dawson, dean of the College of Engineering. Based on a one-semester pre-engineering entrance requirement, the new curricula include an additional four courses in humanities and social studies. As a result, the total time devoted to non-technical work in the liberal arts field is increased to about 20 percent of the graduation requirement.

Under the new plan, students will select, during their 4-year training in any of the engineering departments at the university, four courses from the fields of psychology, sociology, philosophy, government, literature, history, and foreign language. Expansion of liberal arts studies without changes in the technical engineering training is made possible by increased entrance requirements. First-semester college work in mathematics, English, speech, and chemistry must be satisfactorily completed before students are enrolled in the College of Engineering, and regular second-semester work in these fields is included in the first semester of the 4-year undergraduate engineering curricula.

Nuclear Engineering

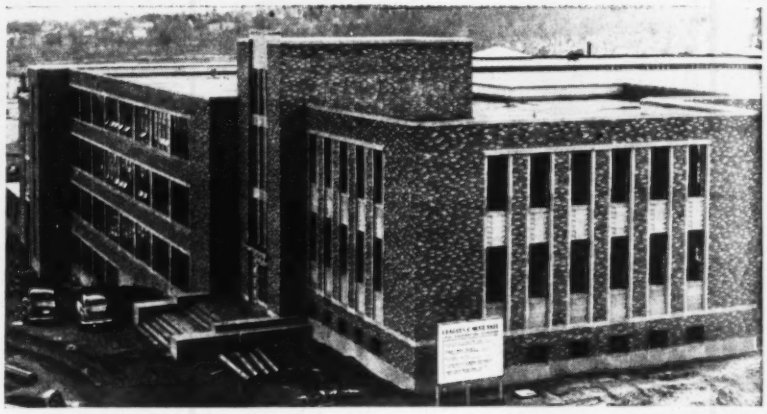
A graduate school of nuclear engineering has been established at Richland, Wash., sponsored by General Electric Co. and four universities. Instructors and students are employees of the Hanford Engineering Works. Headed by F. Ellis Johnson, former dean of engineering at the University of Wisconsin, the school will help to overcome what David E. Lilienthal, chairman of the Atomic Energy Commission, has described as a "critical shortage of trained scientific and technical personnel, "Hanford officials said. The cooperating universities, which will grant credits toward degrees for work done at the school, are the University of Washington, University of Oregon, Washington State College and Oregon State College.

Freeman Fund Scholarship

The Boston Society of Civil Engineers, 715 Tremont Temple, Boston 8, Mass., announces that the Freeman Fund Committee will receive applications for a scholarship covering a year's study or research work in connection with hydraulics or an allied science. A stipend of $3,000 will be provided for tuition, traveling and living expenses for a single man, $3,600 for a married man. Candidates must be American citizens at least 24 years of age, and graduates of a technical school of recognized standing. Preference will be given to residents of New England and eastern New York north of New York City. Full information may be obtained from the secretary of the Boston Society of Civil Engineers and applications must be received on or before July 15, 1948.

Surveying Teachers' Conference

A regional surveying teachers' conference is to be held Aug. 26-28 under the auspices of Committee VIII, civil engineering division of the American Society for Engineering Education and the Cooper Union, at Green Engineering Camp, Ringwood, N. J. The registration fee of $15 covers meals and lodging. Invitations are extended to engineers and organizations interested in surveying. Communications should be addressed to John O. Eichler, The Cooper Union, New York City.



FOR FURTHERING ENGINEERING EDUCATION—Engineering buildings have been completed recently at two large universities. Charles Church More Hall (upper picture) at the University of Washington, Seattle, is named after a long-time member of the faculty. With its new classroom and laboratory facilities, it will enable the university to accept many more engineering students next fall. John Paul Jones was the architect and Strand & Sons were the general contractors. The $900,000 engineering building at Duke University, Durham, N. C. (lower picture), was occupied in January of this year. It doubles the capacity of the engineering school, which was formerly housed in five separate buildings. It includes a 20,000-volume library. Construction was by the J. A. Jones Co. of Charlotte, N. C. The architect was Horace Trambauer, Philadelphia, Pa.

S. C. road commissioner discharge held illegal

Discharge last year of South Carolina Chief Highway Commissioner J. Stanley Williamson has been held illegal by the State Supreme Court.

The ruling had the effect of returning the case to the circuit court for further proceedings and did not automatically restore Mr. Williamson to office. He brought court action against the state highway commission and C. R. McMillan, who was named to replace him, on the basis that he had been elected by the commission in 1945 for a four-year term and that he could not be dismissed without cause or without a hearing. Circuit Judge M. M. Mann dismissed the suit but the high court reversed the dismissal.

Legislation sought for Ohio superhighways

An Ohio Turnpike Committee has been incorporated to support legislation which will permit the construction of self-supporting superhighways on the model of the Pennsylvania Turnpike. Ernest M. Green of Cleveland, who was elected president of the committee, said that such a bill would be introduced at the next session of the legislature. Similar legislation in the last session was approved by the Senate but was rejected by the House.

Other officers elected by the Committee were A. C. Neff, Middletown, first vice-president, and Ralph W. Sanborn, Columbus, secretary-treasurer.

B. C. moves to curtail roadside advertising

The British Columbia government is moving toward elimination of much advertising on the highways of the province.

An order-in-council just approved says no person, without a permit, "shall erect or replace signs or signboards or shall paste or paint signs or notices or expose any advertising devices within a distance of 1,000 ft. from the center line of any public highway within the unorganized territory of the province."

The order is aimed to protect the new highways of the province.

Previously it was necessary to obtain a permit to erect a billboard only on the highway right-of-way.

Works Minister E. C. Carson indicated that the government probably would not attempt to remove already erected signs.

Indiana harbor plan is being reconsidered

The 15-year-old plan to build a $15,000,000 harbor on Lake Michigan near Gary, Ind., and construction of a water route from the Calumet industrial area south of Chicago to connect with waterways to the Gulf of Mexico was revived June 2 at a conference in Indiana called by Gov. Ralph F. Gates. Representatives of the Indiana Harbors & Terminals Commission and the Indiana Economic Council attended.

According to Capt. O. F. Heslar, chairman of the Harbors & Terminals Commission, it is proposed to locate the new harbor at the head of the Burns Waterway in Porter County.

The 1933 Indiana General Assembly appropriated $50,000 for a preliminary survey. Of this sum, $40,000 still remains unused. The idea is to link the Calumet heavy industry area with the world's waterways. After construction of the harbor proper, the waterway would be dredged to give direct access to the city of Gary. Joining the Sag Canal and Little Calumet River would provide a path across the Calumet to the Illinois Waterways System.

AGC nears goal in Army program

The Associated General Contractors of America last week reported that it had attained 84 percent of its goal in sponsoring reserve construction units in the Army affiliation program.

The report, submitted one year after the Army announced its program for industrial mobilization, shows that 84 construction units are being organized actively as part of the Organized Reserve Corps by the army and member branches throughout the United States. Dwight W. Winkelman, president of the AGC, and H. E. Foreman, managing director, submitted the report.

To spend $9 million on a New Mexico road

Reconstruction work totaling almost $9,000,000 is being planned for U. S. 66 through New Mexico during the remainder of this year and 1949, Burton Dwyre, state highway engineer, has announced. The spending of $6,000,000 of that amount is contingent on the receipt of federal funds to match this amount.

Now under construction are four projects, totaling almost $2,500,000 in cost and a total of 39 miles in length.

Financing planned for Penn Turnpike addition

The Pennsylvania Turnpike Commission last week announced it had entered an agreement with four banking firms for the financing of the proposed eastern extension of the turnpike to reach Philadelphia.

Thomas J. Evans, commission chairman, said the agreement was made with B. H. VanIngen Co., Blyth and Company and First Boston Corp., all of New York City, and Drexal and Co., of Philadelphia.

Although commission engineers have not revealed any estimate of cost for the 100-mile superhighway extension, local newspapers have placed the figure at about $70,000,000.

Engineers make soundings for Wabash River bridge

Engineers have started soundings to determine the best location for a proposed $3,000,000 four-lane toll bridge across the Wabash River from Mt. Vernon, Ind., to southern Illinois. The structure would open a more direct route from Evansville, Ind., to St. Louis, Mo.

Walter Koch, Evansville, chairman of the Indiana Toll Bridge Commission, said the project would be financed by revenue bonds. The commission has the funds to build it and will go ahead as soon as Gov. Dwight Green of Illinois gives assurance that his state will build the necessary approach highway from Norris City to the bridge. Sverdrup and Parcel, St. Louis engineering firm, is making the survey.

Postpone building plans at Wyoming university

Trustees of the University of Wyoming, Laramie, have announced that no contracts are likely to be awarded soon for construction or modification of five university buildings, for which bids were opened recently.

The low bid for the project was $3,352,000, submitted by J. P. Steel Construction Co. of Laramie. The Wyoming legislature had appropriated about $4,000,000 for the work, but trustees said they feared complications might boost the total above that amount.

The project calls for construction of a men's dormitory and education building; completion of the agricultural and art and book store buildings, and expansion of Knight hall, a women's dormitory.

OBITUARY

Joseph A. Gehres, 86, a civil engineer for more than 50 years, died in Akron, Ohio, June 4. He studied engineering at Ohio State University. At one time he was planning engineer for Akron.

Charles E. Butters, 79, former Indianapolis, Ind., bridge contractor, died recently at Homestead, Fla. He participated in the construction of many bridges in the Indianapolis area.

Rolla F. Allen, 66, a safety engineer for the Illinois Commerce Commission, died June 3 in Springfield, Ill.

Frank O. Fernald, 68, Charlotte, N. C., civil engineer and a district superintendent for the Pullman Co. until his retirement in 1946, died June 2. He received his civil engineering degree from the University of Minnesota and was a civil engineer with the Northern Pacific Railroad from 1904 until he joined the Pullman Company in 1912. During World War I, he served as a captain with the 147th Engineers, and before going to Charlotte in 1938 was with the Pullman Company at Dallas, Tex.

J. Milton Coleman, 51, of Holicong, Pa., a civil engineer with the Pennsylvania State Highway Department, died recently in Abington, Pa. He attended Cornell University.

Howard Ketchum Dutcher, 70, of Vancouver, B. C., died recently. He was graduated from McGill University in 1906, and later lectured at both McGill and Toronto universities. He was head of the department of civil engineering, University of British Columbia, until 1918. His civil engineering career had taken him to Russia to build railroads, and to the Okanagan district to design and build irrigation systems. During the war he was in charge of constructing the large air crew training station at Medicine Hat, Alta.

Eugene P. Brown, 54, civil engineer, associated with George F. Young at St. Petersburg, Fla., died in that city recently. From 1927 to 1946 he was with the department of parks, New York City, and did work in connection with the World's Fair.

Carroll Merwin Hurlburt, 67, Hood River County, Ore., engineer and roadmaster, died May 23. He was an Army Engineer captain in World War I.

Harold T. Dodge, 51, senior engineer for Seattle, Wash., died there June 3. A graduate of the University of Washington in engineering, he had been with the city 28 years. He was a World War I veteran.

Edward T. Saunders, 49, staff engineer of the Oregon district of the Public Roads Administration, died May 18, at Portland, Ore. He had been with PRA 25 years.

Charles A. Mann, 72, Highland Park, Ill., consulting engineer and architect, died June 6. He was a civil engineering graduate of Purdue University.

Elmer Hilty, 68, former chief of construction for the Ohio Highway Department, died June 4 in Columbus. He received his civil engineering degree from Ohio Northern University, Ada, Ohio, and was formerly county engineer of Hancock County.

Cigarette tax money diverted to Indiana schools

Governor Ralph F. Gates of Indiana is asking transfer and allocation of $5,000,000 from the state's cigarette tax fund for distribution to various school units. The money would be used chiefly to aid school building programs and to buy school equipment and supplies.

Authority to distribute the money in this way comes from an act passed by the 1947 General Assembly. The cigarette tax fund amounts to over $10,000,000 and is said to be accumulating at the rate of $1,000,000 monthly.

MAJOR MEETINGS

National Association of County Officials, Annual conference, Hotel George Washington, Jacksonville, Fla., June 21-23.

American Society for Testing Materials, annual meeting, Hotel Book-Cadillac, Detroit, Mich., June 21-25.

American Road Builders Annual Convention and Road Show, Stevens Hotel and Soldier Field, Chicago, Ill., July 16-24.

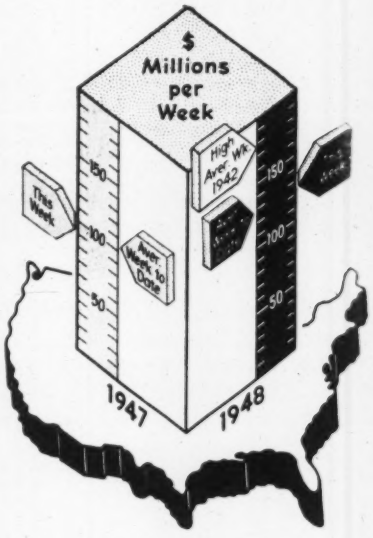
American Society of Civil Engineers, Annual convention, Hotel Olympic, Seattle, Wash., July 21-23.

Oregon Traffic Engineering Conference, Oregon State College, Corvallis, July 29-31.

Regional Surveying Teachers Conference, Green Engineering Camp, Ringwood, N. J., Aug. 26-28.

National Council of State Boards of Engineering Examiners, annual meeting, Hotel Utah, Salt Lake City, Utah, Aug. 27-28.

CONSTRUCTION ACTIVITY



As Reported this week to . . .
Engineering News-Record

CONTRACT VOLUME

Continental U. S. Only (Thousands of Dollars)

	Week of June 17 1948	Cumulative 1948 (25 wks.)	Cumulative 1947 (25 wks.)
Federal	$2,370	$511,629	$291,046
State & Mun.	56,560	1,133,441	766,004
Total Public.	58,930	1,645,070	1,057,050
Total Private	67,953	1,528,051	1,473,345
U. S. Total..	**$126,883**	**$3,173,121**	**$2,530,395**

WHERE CONSTRUCTION ACTIVITY ORIGINATED THIS WEEK

Dollar Volume (Thousands)

Type of Work	This Week	Cumulative 1948 (25 wks.)	Cumulative 1947 (25 wks.)
Waterworks ...	$1,175	$96,398	$53,356
Sewerage	4,354	98,923	57,030
Bridges	17,749	140,666	77,722
Highways	22,223	463,097	362,908
Earthwork, Waterways	1,154	262,692	134,492
Buildings, Public	10,882	487,716	244,164
Industrial ...	21,061	492,195	366,788
Commercial ..	38,396	918,101	883,970
Unclassified ...	9,889	215,353	349,965

NOTE: Minimum size projects included are: Waterworks and waterway projects, $28,000; other public works, $50,000; industrial buildings, $68,000; other buildings, $250,000.

NEW PRODUCTIVE CAPITAL

	Cumulative 1948 (25 wks.)	Cumulative 1947 (25 wks.)
NON-FEDERAL	$2,118,844	$845,385
Corporate securities	1,304,352	336,293
State and Municipal	814,492	509,092
Total Capital	**$2,118,844**	**$845,385**

ENR INDEX NUMBERS

Index Base = 100	1913	1926
Construction Cost	455.80	219.10
Building Cost	339.26	183.39
Volume	258	113